RT² Profiler PCR Array (96-Well Format and 384-Well [4 x 96] Format)

Rat Skeletal Muscle: Myogenesis & Myopathy

Cat. no. 330231 PARN-099ZA

For pathway expression analysis

Format	For use with the following real-time cyclers
RT² Profiler PCR Array, Format A	Applied Biosystems® models 5700, 7000, 7300, 7500, 7700, 7900HT, ViiA™ 7 (96-well block); Bio-Rad® models iCycler®, iQ™5, MyiQ™, MyiQ2; Bio-Rad/MJ Research Chromo4™; Eppendorf® Mastercycler® ep realplex models 2, 2s, 4, 4s; Stratagene® models Mx3005P®, Mx3000P®; Takara TP-800
RT² Profiler PCR Array, Format C	Applied Biosystems models 7500 (Fast block), 7900HT (Fast block), StepOnePlus™, ViiA 7 (Fast block)
RT² Profiler PCR Array, Format D	Bio-Rad CFX96™; Bio-Rad/MJ Research models DNA Engine Opticon®, DNA Engine Opticon 2; Stratagene Mx4000®
RT² Profiler PCR Array, Format E	Applied Biosystems models 7900HT (384-well block), ViiA 7 (384-well block); Bio-Rad CFX384™
RT² Profiler PCR Array, Format F	Roche® LightCycler® 480 (96-well block)
RT² Profiler PCR Array, Format G	Roche LightCycler 480 (384-well block)
RT² Profiler PCR Array, Format H	Fluidigm® BioMark™

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Description

The Rat Skeletal Muscle Development & Disease RT² Profiler PCR Array profiles the expression of 84 key genes involved in skeletal muscle differentiation, function and disease-related processes. Skeletal muscle's role in voluntary movement contributes greatly to energy metabolism and its regulation via glucose uptake and storage by insulin. Complications from aging and metabolic diseases like diabetes and metabolic syndrome contribute to muscle wasting (atrophy). However, recent research hypothesizes that metabolic defects in skeletal muscle contribute to the etiology of diabetes and metabolic syndrome, suggesting that skeletal muscle has a larger role in these disease states than initially expected. Large heterogeneous protein complexes including titin or dystrophin facilitate muscle contraction by connecting the skeletal muscle cytoskeleton to the extracellular matrix. Muscular dystrophies arise from inherited mutations in the genes encoding components of these complexes, and gene expression changes disrupting their normal contractile function dysregulate signaling pathways that control muscle growth. Potential therapies for muscle wasting include generation of new muscle cells (myogenesis) or increasing the mass of current muscle cells (hypertrophy). Thus, muscle-specific biological and pathophysiological processes are interrelated and cannot be studied in isolation. This array includes genes important for basic skeletal muscle function, development and growth, as well as genes related to the disease processes of metabolic syndrome and muscle wasting. Using real-time PCR, you can easily and reliably analyze the expression of a focused panel of genes involved in skeletal muscle development and disease with this array.

For further details, consult the *RT² Profiler PCR Array Handbook*.

Shipping and storage

RT² Profiler PCR Arrays in formats A, C, D, E, F, and G are shipped at ambient temperature, on dry ice, or blue ice packs depending on destination and accompanying products. RT² Profiler PCR Arrays in format H are shipped on dry ice or blue ice packs.

For long term storage, keep plates at –20°C.

Note: Ensure that you have the correct RT² Profiler PCR Array format for your real-time cycler (see table above).

Note: Open the package and store the products appropriately immediately on receipt.

Array layout (96-well)

For 384-well 4 x 96 PCR arrays, genes are present in a staggered format. Refer to the *RT² Profiler PCR Array Handbook* for layout.

	1	2	3	4	5	6	7	8	9	10	11	12
A	Acta1	Actn3	Acvr2b	Adipoq	Adrb2	Agrn	Akt1	Akt2	Atp2a1	Bcl2	Bmp4	Camk2g
B	Capn2	Capn3	Casp3	Cast	Cav1	Cav3	Cryab	Cs	Ctnnb1	Dag1	Des	Dmd
C	Dmpk	Dysf	Emd	Fbxo32	Fgf2	Foxo3	Hdac5	Hk2	Igf1	Igf2	Igfbp3	Igfbp5
D	Ikbkb	Il1b	Il6	Lep	Lmna	Mapk1	Mapk14	Mapk3	Mapk8	Mb	Mbnl1	Mef2c
E	Mmp9	Mstn	Musk	Myf5	Myf6	Myh1	Myh2	Myod1	Myog	Myot	Neb	Nfkb1
F	Nos2	Pax3	Pdk4	Pparg	Ppargc1a	Ppargc1b	Ppp3ca	Prkaa1	Prkab2	Prkag1	Prkag3	Rhoa
G	Rps6kb1	Sgca	Slc2a4	Tgfb1	Tnf	Tnnc1	Tnni2	Tnnt1	Tnnt3	Trim63	Ttn	Utrn
H	Actb	B2m	Hprt1	Ldha	Rplp1	RGDC	RTC	RTC	RTC	PPC	PPC	PPC

Gene table: RT² Profiler PCR Array

Position	UniGene	GenBank	Symbol	Description
A01	Rn.82732	NM_019212	Acta1	Actin, alpha 1, skeletal muscle
A02	Rn.17592	NM_133424	Actn3	Actinin alpha 3
A03	Rn.24240	NM_031554	Acvr2b	Activin A receptor, type IIB
A04	Rn.24299	NM_144744	Adipoq	Adiponectin, C1Q and collagen domain containing
A05	Rn.10206	NM_012492	Adrb2	Adrenergic, beta-2-, receptor, surface
A06	Rn.2163	NM_175754	Agrn	Agrin
A07	Rn.11422	NM_033230	Akt1	V-akt murine thymoma viral oncogene homolog 1
A08	Rn.87066	NM_017093	Akt2	V-akt murine thymoma viral oncogene homolog 2
A09	Rn.218029	NM_058213	Atp2a1	ATPase, Ca++ transporting, cardiac muscle, fast twitch 1
A10	Rn.9996	NM_016993	Bcl2	B-cell CLL/lymphoma 2
A11	Rn.10318	NM_012827	Bmp4	Bone morphogenetic protein 4
A12	Rn.10961	NM_133605	Camk2g	Calcium/calmodulin-dependent protein kinase II gamma
B01	Rn.6822	NM_017116	Capn2	Calpain 2
B02	Rn.9726	NM_017117	Capn3	Calpain 3
B03	Rn.10562	NM_012922	Casp3	Caspase 3
B04	Rn.17481	NM_053295	Cast	Calpastatin
B05	Rn.22518	NM_031556	Cav1	Caveolin 1, caveolae protein
B06	Rn.98191	NM_019155	Cav3	Caveolin 3
B07	Rn.98208	NM_012935	Cryab	Crystallin, alpha B
B08	Rn.66581	NM_130755	Cs	Citrate synthase
B09	Rn.112601	NM_053357	Ctnnb1	Catenin (cadherin associated protein), beta 1
B10	Rn.36260	XM_343483	Dag1	Dystroglycan 1 (dystrophin-associated glycoprotein 1)
B11	Rn.39196	NM_022531	Des	Desmin
B12	Rn.10307	NM_012698	Dmd	Dystrophin
C01	Rn.130535	NM_001107484	Dmpk	Dystrophia myotonica-protein kinase
C02	Rn.22869	NM_001107869	Dysf	Dysferlin
C03	Rn.10968	NM_012948	Emd	Emerin
C04	Rn.72619	NM_133521	Fbxo32	F-box protein 32
C05	Rn.31808	NM_019305	Fgf2	Fibroblast growth factor 2
C06	Rn.24593	NM_001106395	Foxo3	Forkhead box O3
C07	Rn.79863	NM_053450	Hdac5	Histone deacetylase 5
C08	Rn.91375	NM_012735	Hk2	Hexokinase 2
C09	Rn.6282	NM_178866	Igf1	Insulin-like growth factor 1
C10	Rn.118681	NM_031511	Igf2	Insulin-like growth factor 2
C11	Rn.26369	NM_012588	Igfbp3	Insulin-like growth factor binding protein 3
C12	Rn.1593	NM_012817	Igfbp5	Insulin-like growth factor binding protein 5
D01	Rn.19222	NM_053355	Ikbkb	Inhibitor of kappa light polypeptide gene enhancer in B-cells, kinase beta
D02	Rn.9869	NM_031512	Il1b	Interleukin 1 beta
D03	Rn.9873	NM_012589	Il6	Interleukin 6
D04	Rn.44444	NM_013076	Lep	Leptin
D05	Rn.44161	NM_001002016	Lmna	Lamin A
D06	Rn.34914	NM_053842	Mapk1	Mitogen activated protein kinase 1
D07	Rn.88085	NM_031020	Mapk14	Mitogen activated protein kinase 14
D08	Rn.2592	NM_017347	Mapk3	Mitogen activated protein kinase 3
D09	Rn.4090	XM_341399	Mapk8	Mitogen-activated protein kinase 8

Position	UniGene	GenBank	Symbol	Description
D10	Rn.40511	NM_021588	Mb	Myoglobin
D11	Rn.205513	XM_001062557	Mbnl1	Muscleblind-like 1 (Drosophila)
D12	Rn.2477	XM_574821	Mef2c	Myocyte enhancer factor 2C
E01	Rn.10209	NM_031055	Mmp9	Matrix metallopeptidase 9
E02	Rn.44460	NM_019151	Mstn	Myostatin
E03	Rn.10210	NM_031061	Musk	Muscle, skeletal, receptor tyrosine kinase
E04	Rn.218675	NM_001106783	Myf5	Myogenic factor 5
E05	Rn.2236	NM_013172	Myf6	Myogenic factor 6
E06	Rn.9692	NM_001135158	Myh1	Myosin, heavy polypeptide 1, skeletal muscle, adult
E07	Rn.10092	NM_001135157	Myh2	Myosin, heavy chain 2, skeletal muscle, adult
E08	Rn.9493	NM_176079	Myod1	Myogenic differentiation 1
E09	Rn.9465	NM_017115	Myog	Myogenin
E10	Rn.163370	NM_001106148	Myot	Myotilin
E11	Rn.134031	XM_229925	Neb	Nebulin
E12	Rn.2411	XM_342346	Nfkb1	Nuclear factor of kappa light polypeptide gene enhancer in B-cells 1
F01	Rn.10400	NM_012611	Nos2	Nitric oxide synthase 2, inducible
F02	Rn.214198	NM_053710	Pax3	Paired box 3
F03	Rn.30070	NM_053551	Pdk4	Pyruvate dehydrogenase kinase, isozyme 4
F04	Rn.23443	NM_013124	Pparg	Peroxisome proliferator-activated receptor gamma
F05	Rn.19172	NM_031347	Ppargc1a	Peroxisome proliferator-activated receptor gamma, coactivator 1 alpha
F06	Rn.163382	NM_176075	Ppargc1b	Peroxisome proliferator-activated receptor gamma, coactivator 1 beta
F07	Rn.6866	NM_017041	Ppp3ca	Protein phosphatase 3, catalytic subunit, alpha isoform
F08	Rn.87789	NM_019142	Prkaa1	Protein kinase, AMP-activated, alpha 1 catalytic subunit
F09	Rn.207202	NM_022627	Prkab2	Protein kinase, AMP-activated, beta 2 non-catalytic subunit
F10	Rn.11089	NM_013010	Prkag1	Protein kinase, AMP-activated, gamma 1 non-catalytic subunit
F11	Rn.149163	NM_001106921	Prkag3	Protein kinase, AMP-activated, gamma 3 non-catalytic subunit
F12	Rn.107401	NM_057132	Rhoa	Ras homolog gene family, member A
G01	Rn.4042	NM_031985	Rps6kb1	Ribosomal protein S6 kinase, polypeptide 1
G02	Rn.136653	NM_001107039	Sgca	Sarcoglycan, alpha (dystrophin-associated glycoprotein)
G03	Rn.1314	NM_012751	Slc2a4	Solute carrier family 2 (facilitated glucose transporter), member 4
G04	Rn.40136	NM_021578	Tgfb1	Transforming growth factor, beta 1
G05	Rn.2275	NM_012675	Tnf	Tumor necrosis factor (TNF superfamily, member 2)
G06	Rn.15460	NM_001034105	Tnnc1	Troponin C type 1 (slow)
G07	Rn.9924	NM_017185	Tnni2	Troponin I type 2 (skeletal, fast)
G08	Rn.13846	NM_134388	Tnnt1	Troponin T type 1 (skeletal, slow)
G09	Rn.15488	NM_031532	Tnnt3	Troponin T type 3 (skeletal, fast)
G10	Rn.40636	NM_080903	Trim63	Tripartite motif-containing 63
G11	Rn.199561	XM_001065955	Ttn	Titin
G12	Rn.9901	NM_013070	Utrn	Utrophin
H01	Rn.94978	NM_031144	Actb	Actin, beta
H02	Rn.1868	NM_012512	B2m	Beta-2 microglobulin
H03	Rn.47	NM_012583	Hprt1	Hypoxanthine phosphoribosyltransferase 1
H04	Rn.107896	NM_017025	Ldha	Lactate dehydrogenase A
H05	Rn.973	NM_001007604	Rplp1	Ribosomal protein, large, P1
H06	N/A	U26919	RGDC	Rat Genomic DNA Contamination
H07	N/A	SA_00104	RTC	Reverse Transcription Control
H08	N/A	SA_00104	RTC	Reverse Transcription Control
H09	N/A	SA_00104	RTC	Reverse Transcription Control
H10	N/A	SA_00103	PPC	Positive PCR Control
H11	N/A	SA_00103	PPC	Positive PCR Control
H12	N/A	SA_00103	PPC	Positive PCR Control

Related products

For optimal performance, RT² Profiler PCR Arrays should be used together with the RT² First Strand Kit for cDNA synthesis and RT2 SYBR® Green qPCR Mastermixes for PCR.

Product	Contents	Cat. no.
RT² First Strand Kit (12)	Enzymes and reagents for cDNA synthesis	330401
RT² SYBR Green qPCR Mastermix (2)*	For 2 x 96 assays in 96-well plates; suitable for use with real-time cyclers that do not require a reference dye, including: Bio-Rad models CFX96, CFX384, DNA Engine Opticon 2; Bio-Rad/MJ Research Chromo4; Roche LightCycler 480 (96-well and 384-well); all other cyclers	330500
RT² SYBR Green ROX™ qPCR Mastermix (2)*	For 2 x 96 assays in 96-well plates; suitable for use with the following real-time cyclers: Applied Biosystems models 5700, 7000, 7300, 7500 [Standard and FAST], 7700, 7900HT 96-well block [Standard and FAST] and 384-well block, StepOnePlus; Eppendorf Mastercycler ep realplex models 2, 2S, 4, 4S; Stratagene models Mx3000P, Mx3005P, Mx4000; Takara TP-800	330520
RT² SYBR Green Fluor qPCR Mastermix (2)*	For 2 x 96 assays in 96-well plates; suitable for use with the following real-time cyclers: Bio-Rad models iCycler, iQ5, MyiQ, MyiQ2	330510

* Larger kit sizes available; please inquire.

RT² Profiler PCR Array products are intended for molecular biology applications. These products are not intended for the diagnosis, prevention, or treatment of a disease.

For up-to-date licensing information and product-specific disclaimers, see the respective QIAGEN kit handbook or user manual. QIAGEN kit handbooks and user manuals are available at www.qiagen.com or can be requested from QIAGEN Technical Services or your local distributor.

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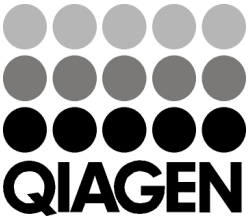

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